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THE HEALTH AND PHYSICAL  
DEVELOPMENT OF IDIOTS AS  
COMPARED WITH MENTALLY  
SOUND CHILDREN OF THE  
SAME AGE.

By G. E. SHUTTLEWORTH, B.A., M.D., &c.

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# THE HEALTH AND PHYSICAL DEVELOPMENT OF IDIOTS AS COMPARED WITH MENTALLY SOUND CHILDREN OF THE SAME AGE.

By G. E. SHUTTLEWORTH, B.A., M.D., &c.,

*Medical Superintendent of the Royal Albert Asylum for Idiots and Imbeciles of the Northern Counties, Lancaster.*

IN honouring me with an invitation to introduce to this Conference some subject connected with "Special Institutions for the Education of Idiots and Imbecile Children," your Secretary suggested that the discussion of the health, development and mortality of this class, as compared with ordinary children, might be of interest. I have, therefore, endeavoured to cull from the Reports of the larger English institutions such information on these points as may serve more particularly to elucidate the hygienic conditions and necessities of their special work.

To this audience I presume I need not insist upon the constant co-existence of physical and of mental defect in the case of idiots and imbeciles. Idiocy may indeed be truly described as a "vice of the entire organism," an affection, therefore, not merely of the nervous system, but of the functions generally of organic life. Oftentimes the whole bodily conformation bears the impress of idiocy, and not only the lineaments of that face, which by its intelligence should reflect the Divine image, but even the form of the limbs, and especially of that masterpiece of mechanism the human hand, are sadly marred. It may indeed be asserted, that in certain typical cases of idiocy an expert can approximately gauge the mental characteristics by a careful survey of the hand, or by a glance at the tongue alone! I refer especially to a re-

markable and not uncommon type of idiocy, in which specific physical peculiarities are found pretty constantly associated with certain definite mental conditions; this type has been designated from its physiognomical resemblances the *Mongol* or *Kalmuc* variety. In another well-marked class of cases, a peculiar dwarfishness of body, with certain features of Cretinism, co-exists with a quite characteristic sluggishness of thought and action; and the mutual likeness of members of this group—called “sporadic cretins”—is indeed marvellous. Other striking defects of physical development often arrest the attention of visitors to idiot asylums: on the one hand will be seen patients with abnormally small heads (*microcephalic*), in aspect almost bird-like; and on the other, individuals who look “top-heavy,” with heads distended by hydrocephalus. As old Fuller quaintly puts it in his ‘Dissertation on Natural Fools,’ “heads are sometimes so little that there is no room for wit, and sometimes so long, that there is no wit for so much room!”

These introductory observations will prepare us to find that, as regards physical health and development, the idiot labours under serious disabilities as compared with the mentally-sound child. And on the principle of the “survival of the fittest,” and remembering that imperfectly-formed tissues are not likely to wear well, it may reasonably be surmised that the mortality of idiot children will prove exceptionally heavy.

If I were asked what is the most constant and characteristic defect of health amongst idiots, I should unhesitatingly reply in the single word *scrofula*. This is not the place to discuss how much that word includes; but we may go so far as to say that its most common manifestations are glandular swellings and abscesses, and that the defective vitality which accompanies it interferes with nutrition and development, and renders its victim specially obnoxious to injurious external influences. The inmates of an idiot asylum furnish frequent examples of glandular sores and scars, of inflamed eyelids, of discharging ears,

and of peculiar eruptions upon the skin. The late Dr. Howe, who investigated the histories of 574 idiotic persons in the State of Massachusetts, says that no less than 419 were known to be of decidedly scrofulous families.\* Dr. Ireland is of opinion that "perhaps two-thirds, or even more, of all idiots are of the scrofulous constitution."† At least 75 per cent. of the deaths in the Royal Albert Asylum are attributed to diseases of scrofulous or tubercular character, and a similar proportion seems to obtain in other institutions for idiots.

In a Conference held under the auspices of the Health Exhibition, it is, I presume, intended that lessons should be deduced from the subjects discussed as to the avoidance and prevention of disease. I cannot therefore leave the subject of scrofula in connection with idiocy without remarking that it is essentially a disease of darkness and dirt; and just in proportion as our people learn to esteem light and cleanliness, both of air and surroundings, and to adopt temperance in all things, we may look for a diminution of this evil. The avoidance of imprudent marriages of persons strongly predisposed to scrofula, is a lesson which sanitary reformers cannot too strongly enforce.

There is another large section of idiots whose physical infirmities bear the strong impress of nervous disorder: I allude to the epileptic, choreic, and paralytic classes. Dr. Langdon Down mentions that in 2000 cases of idiocy investigated by him, well-marked neuroses (nervous disorders) existed in 45 per cent. of the family histories.‡ The most frequent and formidable of the nervous disorders connected with idiocy is undoubtedly *epilepsy*. The frequency with which it complicates idiocy may be gathered from the facts that in the last published § Report of the Darenth Schools for Imbecile Children, Dr. Fletcher Beach states that 153 out of 496 patients suffer from epilepsy;

\* Dr. S. G. Howe, 'Causes of Idiocy,' p. 57.

† Dr. W. W. Ireland, 'On Idiocy and Imbecility,' p. 24.

‡ 'Brit. Med. Journal,' Oct. 11, 1873.

§ Report for 1882.

that at Earlswood, Dr. Cobbold reports that one-fourth of the inmates are epileptic ; whilst at the Royal Albert Asylum, where confirmed epilepsy is, by rule, a disqualification for admission, more than 10 per cent. of the patients suffer more or less from fits. In no less than 28 per cent. of 800 cases, of which I have the history, infantile convulsions have occurred, and in about 20 per cent. they are assigned as the cause of the idiocy. Nerve-storms such as these too often make shipwreck of the intelligence, but in many cases there is no doubt an inherited predisposition to nervous instability, for the origin of which we must look back to the circumstances of bygone generations. In England, unhappily, intemperance is but too likely to figure in a certain number of cases as an ancestral cause, for drunkenness is emphatically one of those sins of fathers which is visited upon the children "unto the third and fourth generation."

Time will not permit of further discussion of the specific constitutional taints associated with idiocy. Enough has been said to prepare us to expect a low standard of health amongst idiots as compared with normal children. Under the best hygienic conditions (such as those aimed at in the larger idiot institutions), there will be found a multitude of minor ailments proceeding from constitutional debility calling for the physician's care. Their feeble powers of resistance to cold, and their peculiar susceptibility to zymotic contagion, render idiot children much more liable to sickness than ordinary children, but in what ratio it is difficult to say in the absence of exact statistics with regard to the latter class. The death statistics of the idiot institutions as compared with those of the ordinary population at similar ages will, however, enable us to judge of the comparative vitality (and inferentially the health) of the two classes.

With regard to that most fatal quinquennium of child-life, I mean the period from birth to five years of age, we have unfortunately no materials for comparison. At only one of our large English institutions are children under five received, viz., at Darenth Schools, and in the Report the



statistics of age of the residents and decedents are not given in such form as will admit of comparison with those of the Registrar-General. (I may say parenthetically, that as the number of recognised idiots and imbeciles under five years of age is returned in the census of 1881 as only 451 \* out of a total of all ages of 32,717, we shall see that any effort to discover their distinctive death-rate would be futile.) For several years past the annual Reports of the Earlswood and the Royal Albert Asylums have contained tables of residents and decedents in quinquennial groups of ages, and from these we can estimate the death-rates prevailing at successive periods from 5 to 20 years of age. Combining the figures in the Reports of the two institutions from 1879 to 1883 (including parts of 1878 and 1883), we obtain the following death-rates, calculated upon an average annual number under treatment at these ages, of 775:—

Ages.	Deaths per 1000 resident at each age.		
	Male.	Female.	Both Sexes.
From 5 to 10 . . .	52·9	44·6	50·1
From 10 to 15 . . .	31·6	38·8	33·9
From 15 to 20 . . .	46·0	43·2	45·1

In the Registrar General's 45th Report† the following is given as the mortality to 1,000 persons living at each group of ages for the five years from 1878 to 1882 inclusive:—

Ages.	Males.	Females.
From 5 to 10 . . .	6·3	5·9
From 10 to 15 . . .	3·3	3·4
From 15 to 20 . . .	4·7	4·9

Contrasting these figures and those above given, we may

\* See official remarks on untrustworthy character of parental returns of Idiotic and Imbecile Children ('Census of England and Wales, 1881,' vol. iv., p. 68).

† 45th Annual Report of Registrar-General for England, Tables 23 and 24. (*Mean of Statistics, 1878-82*).

say, that the approximate ratios between idiot and ordinary mortality at the various ages are as follow :—

From 5 to 10, as 8 to 1.

From 10 to 15, as 10 to 1.

From 15 to 20, as 9 to 1.

So far as limited data are to be relied on, we may, therefore, conclude that the mortality of idiots between the ages of 5 and 20 is eight or nine times as great as that of sound-minded children of similar age.

For the reason previously given, I have been unable to include the statistics of Darenth in my calculations. Had I done so the disparity between idiot and ordinary mortality would have been still more marked, as the death-rate there averages nearly 8 per cent. on the average number resident at all ages, against 4·4 at Earlswood, and 3·5 at the Royal Albert Asylum. The higher death-rate is no doubt due to the feeble character, tender age, and liability to epilepsy, which characterises the admissions to Darenth.

Turning now to the subject of the physical development of idiots as compared with mentally sound children, we shall not be surprised to note the almost uniform inferiority of the former class. Many idiots are undoubtedly small at birth ; not a few have been prematurely brought into the world ; but, in nearly all, imperfection of function interferes with due nutrition and development. According to Dr. Kind's\* observations, the difference in size between idiot and normal children is not very obvious during the first five years of life, but is more marked in the cretin class. It will be seen, however, from the appended Table and Chart (for which I beg to record my acknowledgments to Mr. C. Roberts, F.R.C.S., to whom some years ago I sent weights and measurements of 300 of my patients) that British idiots are shorter than the general population :—at 5 years by 1 inch ; at 10 years by 2 inches ; at 15 years by 3 inches ;

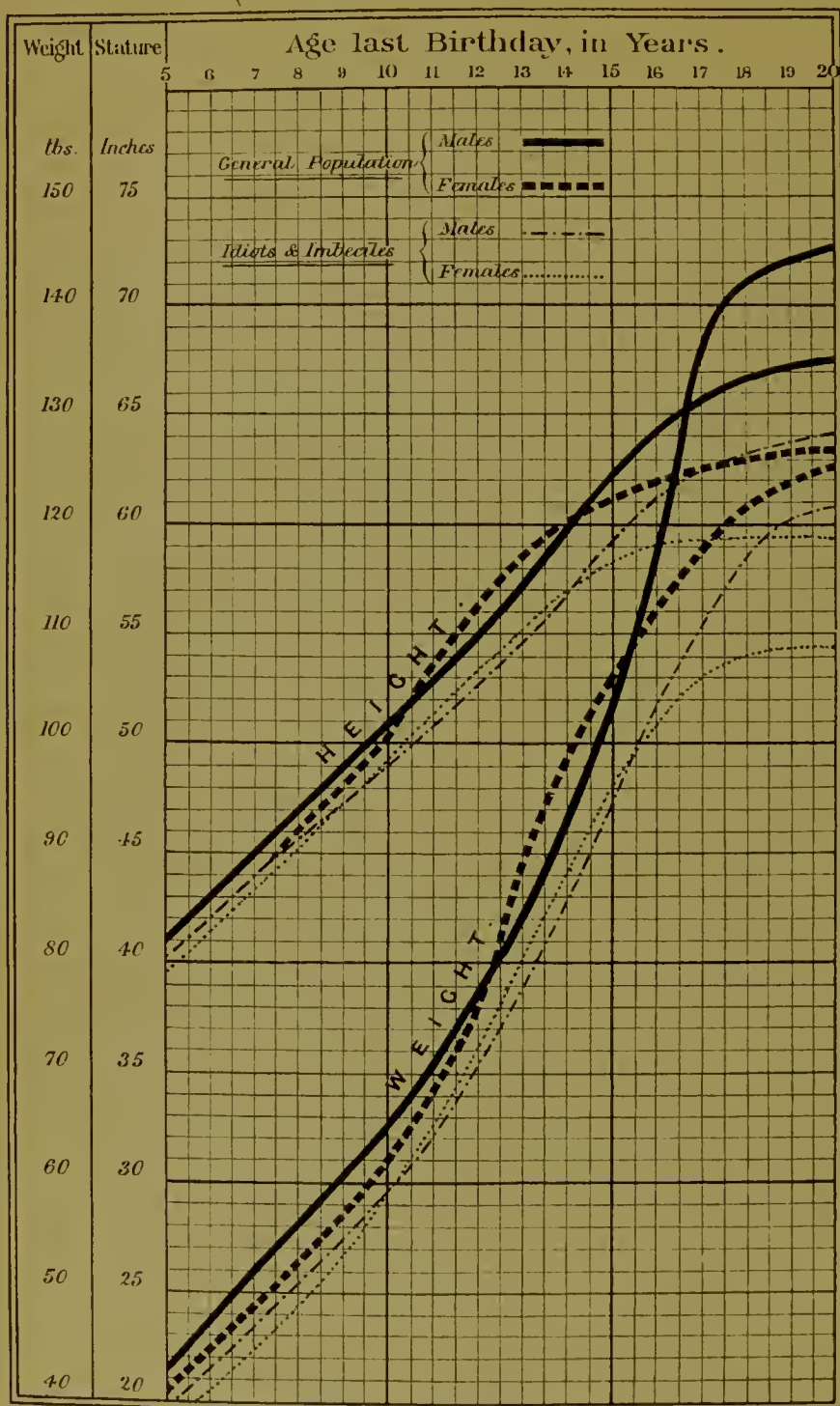
\* '*Ueber das Längenwachsthum der Idioten*,' von Dr. Kind, Langenhagen.





# **DIAGRAM SHOWING RELATIVE MEAN STATURE AND WEIGHT OF THE GENERAL POPULATION, & OF 1209 IDIOTS & IMBECILES.**

(C. Roberts, F.R.C.S.)



(To illustrate Dr Shuttleworth's paper Sc. Hygiene Conf I.H.E.)

at 20 years by 3 inches. Whilst, as regards weight, male idiots are lighter than the general population: at 8 years by 4½ lbs.; at 10 years by 6 lbs.; at 15 years by 8 lbs.; at 20 years by 23½ lbs.; the disparity being greater in the male than in the female sex. It appears that the relative rate of growth of the two sexes of idiot children follows the same rule as that of normal children, and is subject to the same variations at the age of puberty, for a few years preceding which the growth of girls is in excess of that of boys.

TABLE showing the Relative MEAN STATURE and WEIGHT of the GENERAL POPULATION, and of 1209 IDIOTS and IMBECILES in EARLSWOOD, ROYAL ALBERT, and LARBERT ASYLUMS.

Age last Birthday.	HEIGHT.				WEIGHT.			
	General Population.		Idiots and Imbeciles.		General Population.		Idiots and Imbeciles.	
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.
	Inches.	Inches.	Inches.	Inches.	lbs.	lbs.	lbs.	lbs.
5	41'0	40'55	40'0	39'5	..	39'2	39'0	37'5
6	43'0	42'88	42'25	41'25	..	41'7	43'0	41'0
7	45'0	44'45	44'0	43'25	..	47'5	46'5	45'0
8	47'0	46'60	45'75	45'25	55'0	52'1	50'5	49'0
9	49'0	48'73	47'5	47'5	60'0	55'5	55'5	53'0
10	51'0	51'05	49'0	49'0	65'0	62'9	59'0	59'0
11	53'0	53'10	51'0	51'0	70'0	68'1	64'5	66'0
12	55'0	55'66	52'5	53'0	77'5	76'4	70'5	72'0
13	57'5	57'77	54'75	55'0	85'0	87'2	77'0	80'0
14	60'0	59'80	56'5	56'5	92'5	96'7	85'5	88'0
15	62'0	60'93	59'25	58'0	102'5	106'3	94'5	95'0
16	64'0	61'75	60'75	59'0	117'5	113'1	103'0	102'0
17	65'5	62'52	62'5	59'25	135'0	115'5	110'0	106'0
18	66'5	62'44	63'25	..	142'5	121'1	116'0	108'0
19	67'0	62'75	63'25	..	143'7	123'8	120'5	108'5
20	67'25	62'98	64'0	59'5	145'0	123'4	121'5	108'5
21	67'5	63'03	64'25	..	146'2	121'8	122'0	..
22	..	62'87	64'5	..	147'5	123'4	122'5	..
23	..	63'01	..	..	148'7	124'1	..	..
24	..	62'70	..	..	150'0	120'8	..	..
25-30	67'75	62'02	64'75	59'75	151'2	120'0	123'0	109'0
30-40	..	..	..	..	152'5	120'8	..	..
40-50	..	61'15	..	..	155'0	118'6	..	..
50-60	68'0	..	..	..	157'5	104'0	..	..

In conclusion, it only remains to "point the moral" of my paper. In the first place, it would seem that, owing to the disproportionate tendency to disease and death

amongst idiots as compared with normal children, all institutions for the education of the former class should be regarded as medical institutions, and be under the charge of medical men. Secondly, that the institutions themselves should be conducted with special regard to hygienic principles ; that their surroundings should be open and salubrious, with ample space for out-door employment and recreation ; that the buildings should be placed on a dry soil, be well lighted and ventilated, and at the same time well warmed ; and that the dietary should be liberal, easily digestible, yet rich in the heat-forming constituents of food. (Special arrangements must necessarily be made, both as to structural accommodation and constant watching when epileptic idiots are received.) Thirdly, that education must proceed on physiological principles, starting with the improvement and training of the bodily powers, without which no mental improvement can be expected. How these desiderata are attained by cultivation of the senses, by judicious drill, by objective teaching, and by suitable industrial employment, it does not fall within the scope of my present paper to describe ; but I would strongly advise such of my audience as are interested in the subject to inspect for themselves the work of some one of the special institutions. It has been aptly said, that in a well-managed idiot institution the intelligent visitor will find a species of "educational laboratory, where experiments may be tried, to the advantage of teachers and pupils of every grade."\* Dark and dismal though the work may at first appear, the patient observer will, perhaps, by-and-bye be rewarded by seeing the cloud lifting, and, as he watches the process, exclaim with Prospero :

"The charm dissolves apace ;  
And as the morning steals upon the night,  
Melting the darkness, so their rising senses  
Begin to chase the ignorant fumes that mantle  
Their clearer reason."

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\* Report Mass. School for Feeble-minded, 1877.

## SCHOOL HYGIENE CONFERENCE.

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### DISCUSSION ON SPECIAL INSTITUTIONS FOR THE EDUCATION OF IDIOTS AND IMBECILE CHILDREN.

Dr. SHUTTLEWORTH, in reply to the observations which had been made, said the causes of idiocy were outside the limits of his paper; and, as the Chairman had remarked, there were so many concurrent causes that it needed the utmost care to lay one's finger on this or that in any particular case and say it was the special cause. He had endeavoured to go through his case-books and tabulate the causes of idiocy, as far as they could be learned from the statements of relatives, assisted by his own observations and other sources of information, but he had not as yet ventured to publish the results. All these cases required a great deal of mature consideration, and it did not do to accept as gospel all the statements which the friends or relatives made. You were frequently told that there was no defect in the family except in the case of the individual child. But as time went on you found from the visits of the relatives that there were all varieties of physical infirmities, more or less correlated with idiocy, in the family, particularly evidences of scrofula and phthisis; and after watching carefully in this way for some time, one was able to get at the root of the thing much better than by publishing statistics hurriedly. In the course of a little while he hoped to be able to give the results of his past fourteen years' experience, gathered from some 800 cases, in which he had obtained tolerably exact information. Taking the percentage roughly of the concurrent causes, he believed in about 20 per cent. there was phthisis in the

family history, and in 20 per cent. insanity or imbecility ; but not in more than 4·4 per cent. was there evidence of consanguinity between the parents or grandparents. So far as his experience went, in not more than 10 per cent. was there evidence of intemperance, though, if he knew more, that figure might have to be increased. It must be borne in mind, too, that the majority of children in the Royal Albert Asylum were not paupers, but belonged to the working class, with a few from the higher social grades. No doubt amongst paupers the prevalence of drunkenness as a factor would be greater. He wished some school could be established in every large centre for the backward children, of whom Miss Lupton had spoken, who were not able to bear the strain of the ordinary schooling. After a certain time spent in such a special school a selection might be made, and some would be fit to enter an ordinary school, while others ought to be sent to an idiot asylum, or, as the Chairman much better designated it, a "training school for the feeble-minded." The employment of imbecile children in agricultural pursuits had been referred to by Dr. Drysdale as desirable, and that was the experience of all who had had to do with special institutions. All the large establishments in this country had ample farms for the employment of their children, though they did not go in for farming with a view to mere profit. At Lancaster they had 100 acres, on which the children were employed for the benefit of their health as well as for the sake of the produce. There were about fifty or sixty boys who worked on the land, and many of them did very useful work, whilst a certain proportion did work which was no doubt useful to themselves, but was not very productive in a pecuniary sense. Economists might ask why these institutions should hold land which paid but little, and the answer was that it was the very best means of employment for improving the physical and mental condition of the inmates. He, with Dr. Beach, had visited the American institutions, and could bear testimony to the very good work which was done there. It was now some years



since they were there, namely, in 1876, and what then struck them most was the excellence of the scholastic work, the industrial being hardly equal to what was done in England, though he ought perhaps to except the institution in Ohio, where they had an admirable farm, and the boys did a great deal of outdoor work; and he was glad to find that now some of the other establishments which had been at first located in town had gone into the country. In England the work was much trammelled by the question of ways and means, the Darenth school being as yet the only one which was supported at the cost of the rates; all the others were more or less charitable institutions, except those which were in private hands. The Royal Albert Asylum at Lancaster had certainly been most munificently supported, for, having been opened fourteen years ago, it now had between 500 and 600 inmates, and, besides a fine building and an estate of 100 acres, there was an endowment fund of nearly £100,000, so that it was evident that the sympathies of the people in the north were strongly in favour of such institutions. At the same time they were often painfully impressed, when the limited time for which the children were received expired, with the necessity of some further provision being made for them; and there seemed a great need for some institution for children above the pauper class, who, having received a certain amount of training, were still unable to take care of themselves. There were certain matters also in connection with lunacy legislation which required alteration. At present every patient whom they received—little children six years old even—had to be certified by two medical men, just as if they were adult lunatics. This seemed absurd, and acted as a deterrent on parents sending their children for education. In conclusion, Dr. Shuttleworth said he had placed in the Educational Department in the Exhibition a collection of appliances used in the training of imbecile children, which he should be glad to explain to those interested in the subject.



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